

Pond Construction

Alabama Guide Sheet No. AL 378



Definition

Ponds impound water and provide owners with excellent recreational opportunities for fishing, swimming, and wildlife viewing as well as potential water sources for livestock, irrigation, and fire fighting. A properly located, well constructed pond can be a beautiful addition to a landscape.

Construction

General

Always follow the plans and construction specifications closely in building the dam for the pond.

Safety

A pond site above a highway, railroad, dwelling, or building can create a safety hazard should the dam fail.

Permits

Federal wetland programs such as Section 404 of the Clean Water Act and Swampbuster provisions of the Food Security Act may apply to private landowners who construct ponds in areas considered to be wetlands. Pond sites that contain wetlands may require permitting from the U.S. Army Corps of Engineers or additional planning assistance may be necessary from the USDA Natural Resources Conservation Service (NRCS).

Pond construction that disturbs five or more acres of land will require the landowner to obtain a NPDES construction permit from the Alabama Department of Environmental Management.

Clearing

Clear and dispose of all trees, stumps, and bushes from the pond dam site, borrow, and spillway area. Cut stumps close to the ground in the pond area. Clear trees and bushes within 15 feet of the pond edge. Dispose of cleared material by burning, burying, or removing from the site.

Site Preparation

After clearing operations are finished, all topsoil containing excessive amounts of organic material should be salvaged from the foundation area of the dam, spillway, and borrow areas. The material should be used as topsoil for the finished surface on the dam, spillway, and other disturbed areas. The foundation of the dam should be thoroughly scarified and the ground slope shaped to no steeper than 1 horizontal (H) to 1 vertical (V).

Cutoff

The cutoff should be excavated to the depth specified in the plan with a minimum 8-foot bottom width and 1 (H) to 1 (V) side slopes. A technician should verify that the cutoff has been excavated into an impervious layer prior to any material being backfilled in the cutoff. Any standing water should be removed from the cutoff prior to backfill.

Drain Pipe

The drain pipe must be ready when machinery begins building the pond. The plans and specifications will state the size and type of material for the drain pipe. Earth fill around the drain pipe and anti-seep collars must be compacted by hand equipment and is critical to the success of the dam holding water.

Embankment

Construct the embankment to the lines and grades specified in the plans. The embankment should be built in horizontal layers not exceeding 8 inches in uncompacted thickness. Moisture content must be maintained to ensure good compaction and bond between layers.

Spillway

Build the emergency spillway exactly as designed. Be sure the entrance and exit to the spillway is open. Do not put fences or other obstructions in the spillway. Do not locate roads on the control section or the exit slope of the spillway. The spillway must be maintained to grass.

Vegetation

Plant grass according to the vegetation plan on the dam, spillway, and any borrow areas after the dam is completed. Provide a good seedbed, fertilize, lime, and mulch all the areas being vegetated according to NRCS Conservation Practice Standard, Code 342 – Critical Area Planting.

Deepen Edges

All shallow water edges should be deepened to provide a depth of 2 to 3 feet so that weeds will not grow.

Riser and Valve

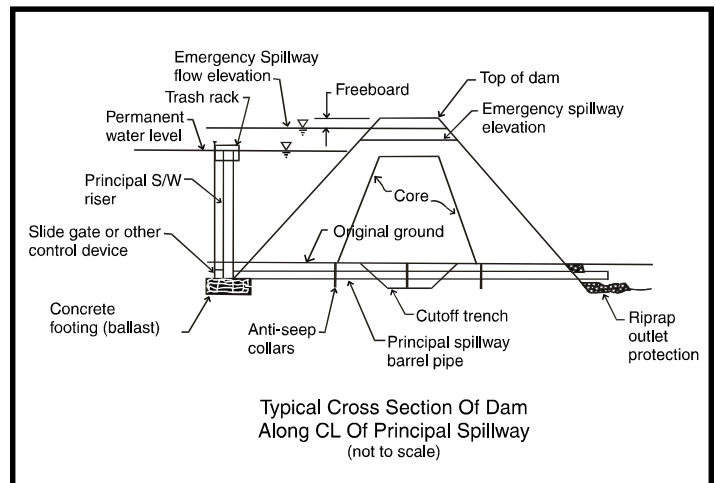
The plans and specifications will state the size and type of material for the riser pipe and the size valve needed. Place concrete around the riser base to offset buoyant forces.

Trash Rack

Place a trash rack on the riser top to ensure floating debris does not clog the pipe system.

Operation and Maintenance

Routine maintenance on the pond will include mowing and fertilizing the vegetation on the dam and spillway, preventing trees and brush from growing on the dam and spillway, repairing any erosion in the spillway, removing debris from the trashrack, controlling muskrats or beavers that bore into the dam, limiting livestock access to the pond, and fertilizing or liming the pond as necessary for fish production.



References

NRCS AL Conservation Practice Standards:
Code 378 - Pond
Code 342 - Critical Area Planting

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